PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark Office, PCT
2011 South Clark Place Room CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 13 March 2001 (13.03.01)	
International application No. PCT/GB00/02576	**Applicant's or agent's file reference** tbr.626.pct.dkc
International filing date (day/month/year) 06 July 2000 (06.07.00)	**Priority date** (day/month/year) 06 July 1999 (06.07.99)
Applicant BRUCE, Terry	

1. The designated Office is hereby notified of its election made:

   [X] in the demand filed with the International Preliminary Examining Authority on:

   02 February 2001 (02.02.01)

   [ ] in a notice effecting later election filed with the International Bureau on:

   _____

2. The election [X] was

   [ ] was not

   made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Pascal Piriou
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
tbr.626.pct.dkc		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/GB 00/ 02576	06/07/2000	06/07/1999
Applicant		
BRUCE, Terry		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

   [X] as suggested by the applicant.

   [ ] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No
PC[redacted] 00/02576

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A62C33/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A62C F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 326 082 A (GILES CHRISTOPHER EDWARD) 16 December 1998 (1998-12-16) page 6, line 34 -page 12, line 33 figures 2,3	1-3,17
A		4-16,18
A	US 3 603 539 A (CLEGG KENNETH K JR) 7 September 1971 (1971-09-07) the whole document	1-18
A	US 3 645 484 A (ITNER EDWIN C) 29 February 1972 (1972-02-29) the whole document	1-18

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 December 2000	28/12/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Neiller, F

1

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PC[redacted]B 00/02576

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
GB 2326082	A	16-12-1998	AU	8025898 A	04-01-1999
			WO	9857709 A	23-12-1998
US 3603539	A	07-09-1971	NONE		
US 3645484	A	29-02-1972	NONE		

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
tbr.626.pct.dk/kv.d		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/GB00/02576	06/07/2000	06/07/1999
International Patent Classification (IPC) or national classification and IPC A62C33/04		
Applicant BRUCE, Terry		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
02/02/2001	07.08.2001
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Schut, T Telephone No. +49 89 2399 8970

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02576

I. Basis f the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1-9 as originally filed

Claims, No.:

1-18 as originally filed

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	4-9,12-16,18
	No:	Claims	1-3,7,10,11,17
Inventive step (IS)	Yes:	Claims	4-6,8,9,18
	No:	Claims	12-16
Industrial applicability (IA)	Yes:	Claims	1-18
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
s e separate sheet

R Item V: **R as ned statement with regard t n velty, inventive st p r industrial applicability**

Claim 1

GB 2 326 082 A discloses a universal hose clamp comprising a universal hose locating mechanism (p. 13, l. 29-31), a hose coupling (p. 11, l. 27-32) for connecting a hose to the hose clamp, and a securing means (4 , 5 and cooperating parts) for securing said locating mechanism to a support structure (2,3).

The fourth paragraph of p. 13 describes the subject-matter of claim 1 in functional terms.

The subject-matter of claim 1 is not novel.

Claims 2, 3, 7 and 17

The features of these claims are also clearly disclosed in the above mentioned document.

Claims 10 and 11

The known hose coupling also has two Azimuth locking mechanisms (see p. 12, l. 28-33 and 51 and 83 in fig. 2).

Claim 12

Although the hose coupling has not been described, it seems obvious that such a coupling comprises a gripping aid, a mounting band and securing means.

Claims 13-16

The features of these claims consist of the obvious solutions for clamping/holding/securing devices.

Re Item VII **Certain def cts in the international applicati n**

The independent claim 1 should be the two-part form in accordance with Rule 6.3(b) PCT. Those features known in combination from GB 2 326 082 A being placed in a preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

The above mentioned prior art document should be briefly discussed in the description (Rule 5.1(a)(ii) PCT).

(12) INTERNATIONAL APPI ION PUBLISHED UNDER THE PATENT ERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 January 2001 (11.01.2001)

PCT

(10) International Publication Number
WO 01/02057 A3

(51) International Patent Classification[7]: A62C 33/04

(21) International Application Number: PCT/GB00/02576

(22) International Filing Date: 6 July 2000 (06.07.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9915653.1 6 July 1999 (06.07.1999) GB

(71) Applicant and
(72) Inventor: BRUCE, Terry [GB/GB]; 11 Buckie Walk, Bridge of Don, Aberdeen AB22 8DF (GB).

(74) Agent: KENNEDYS; Patent Agency Limite, 4th Floor, Queens House, 19-29 St. Vincent Place, Glasgow G1 2DT (GB).

(81) Designated States *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

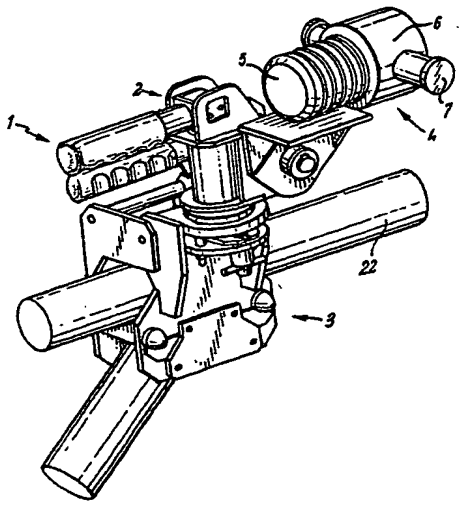
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *With international search report.*

(88) Date of publication of the international search report:
25 May 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HOSE CLAMPING DEVICE



(57) Abstract: A universal hose clamp (1) is described, which comprises a universal hose locating mechanism (2), a hose coupling (4) for connecting a hose to the hose clamp (1), and a securing means for securing said locating mechanism to a support structure. The universal hose clamp (1) may be employed to secure a hose to an existing support structure (22) or to a portable independent frame (23). It is designed to be adaptable for use with a range of hose diameters and as such the universal hose clamp (1) can be employed in a wide range of emergency situations. When deployed the universal hose clamp (1) provides a means for rotating the hose coupling (4) in any direction and thereafter the hose coupling (4) can be locked in that position. Therefore, with the aid of the universal hose clamp (1) only one operator is required to control a hose device in an emergency situation.

WO 01/02057 A3

INTERNATIONAL SEARCH REPORT

Inter. nal Application No
PC B 00/02576

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A62C33/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A62C F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 326 082 A (GILES CHRISTOPHER EDWARD) 16 December 1998 (1998-12-16) page 6, line 34 -page 12, line 33 figures 2,3	1-3,17
A		4-16,18
A	US 3 603 539 A (CLEGG KENNETH K JR) 7 September 1971 (1971-09-07) the whole document	1-18
A	US 3 645 484 A (ITNER EDWIN C) 29 February 1972 (1972-02-29) the whole document	1-18

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 December 2000	28/12/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Neiller, F

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter[illegible]nal Application No
PC[illegible]B 00/02576

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2326082 A	16-12-1998	AU 8025898 A WO 9857709 A	04-01-1999 23-12-1998
US 3603539 A	07-09-1971	NONE	
US 3645484 A	29-02-1972	NONE	

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 January 2001 (11.01.2001)

PCT

(10) International Publication Number
WO 01/02057 A2

(51) International Patent Classification[7]: A62C 33/04

(21) International Application Number: PCT/GB00/02576

(22) International Filing Date: 6 July 2000 (06.07.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9915653.1 6 July 1999 (06.07.1999) GB

(71) Applicant and
(72) Inventor: BRUCE, Terry [GB/GB]; 11 Buckie Walk, Bridge of Don, Aberdeen AB22 8DF (GB).

(74) Agent: KENNEDYS; Patent Agency Limite, 4th Floor, Queens House, 19-29 St. Vincent Place, Glasgow G1 2DT (GB).

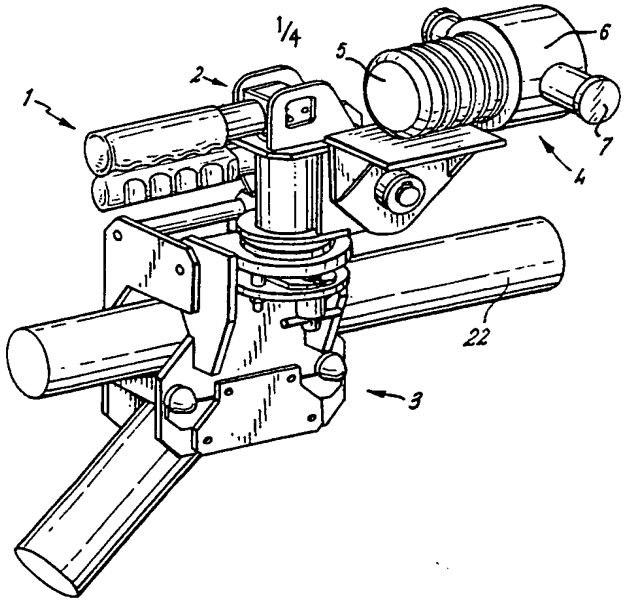
(81) Designated States *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *Without international search report and to be republished upon receipt of that report.*

[Continued on next page]

(54) Title: HOSE CLAMPING DEVICE



(57) Abstract: A universal hose clamp (1) is described, which comprises a universal hose locating mechanism (2), a hose coupling (4) for connecting a hose to the hose clamp (1), and a securing means for securing said locating mechanism to a support structure. The universal hose clamp (1) may be employed to secure a hose to an existing support structure (22) or to a portable independent frame (23). It is designed to be adaptable for use with a range of hose diameters and as such the universal hose clamp (1) can be employed in a wide range of emergency situations. When deployed the universal hose clamp (1) provides a means for rotating the hose coupling (4) in any direction and thereafter the hose coupling (4) can be locked in that position. Therefore, with the aid of the universal hose clamp (1) only one operator is required to control a hose device in an emergency situation.

WO 01/02057 A2

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Hose Clamping Device

The present invention relates to a device for securing hoses, particularly those used by fire fighters.

When fighting a fire there are a number of problems to be addressed in addition to extinguishing the fire, for example rescuing those who are trapped or crowd control. As a result the available human resources need to be carefully targeted to limit/prevent the occurrence of injury.

The present invention recognises that as part of fire-fighting the use and control of a hose is an onerous task requiring the efforts of several people. The present invention attempts to mitigate this problem and allow for better targeting of available resources.

It is an object of the present invention to provide a device whereby a hose can be clamped to a support thus allowing fire fighters to be released from such duties and available for other tasks, for example rescuing those who are trapped.

It is a further object that such a device will be simple to use and readily adapted to the dimensions of different hoses.

According to the present invention there is provided a universal hose clamp comprising a universal hose locating mechanism, a hose coupling for connecting a hose to the hose clamp, and a securing means for securing said locating mechanism to a support structure.

Preferably the support structure is an existing railing, pole or other similar structure.

Preferably the securing means is a universal base clamping mechanism adapted for clamping onto the support structure.

Alternatively the support structure is a portable independent frame.

More preferably the portable independent frame is a tripod.

Preferably in this second embodiment the securing means is a locking mechanism adapted to lockably engage the hose locating mechanism to the support structure, wherein the locking mechanism comprises a male and female member that are adapted to lockably engage.

Preferably the hose locating mechanism comprises a central mount, two Azimuth locking mechanisms and a quick release hose mount.

More preferably the Azimuth locking mechanism contained on the locating mechanism comprises a handle assembly, a connection means and a stab pin.

Preferably the Azimuth locking mechanism contained on the locating mechanism moves between an unlocked position when the handle assembly is in a plane parallel to the stab pin, and a locked position when the handle assembly is rotated through 90 degrees to lie in a plane perpendicular to the stab pin.

Preferably the first Azimuth locking mechanism contained on the locating mechanism provides a means for rotating the hose coupling about an axis in the horizontal plane.

Preferably the second Azimuth locking mechanism contained on the locating mechanism provides a means for rotating the hose coupling about an axis in the vertical plane.

Preferably the hose coupling comprising a gripping aid, a mounting band and a securing means.

Preferably the gripping aid is cylindrical in shape.

More preferably the gripping aid is made of a flexible material, namely rubber.

Preferably the mounting band is cylindrical in shape.

Preferably the securing means is a screw thread mechanism

Preferably the attachment means for the hose coupling to the universal hose clamp is easily detachable.

More Preferably the attachment means is by way of an Azimuth locking mechanism.

In order to provide a better understanding of the invention embodiments will now be described by way of example only with reference to the accompanying Figures in which:

Figure 1 illustrates a universal hose clamp for locking and securing a hose;

Figure 2 illustrates a component of the universal hose clamp, namely a universal hose locating mechanism, with two Azimuth locking mechanisms shown in a locked position;

Figure 3 and 4 illustrate separate perspective views of a further component of the universal hose clamp, namely a universal base clamping mechanism shown clamped to a Y-shaped handrail;

Figure 5 illustrates the universal hose clamp of Figure 1 one of the universal Azimuth locking mechanisms for controlling the hose clamp rotation about the vertical axis in the unlocked position; and

Figure 6 illustrates a tripod on which the universal hose clamp of Figure 1 can be mounted;

Referring initially to Figure 1, a universal hose clamp is generally depicted at 1 comprising a universal hose locating mechanism 2, a universal base clamping mechanism 3 and a hose coupling 4.

The hose ccoupling 4 comprises a cylindrical gripping aid 5, a cylindrical mounting band 6 and a screw thread mechanism 7.

Figure 2 illustrates further detail of the universal hose locating mechanism 2 in the absence of the base clamping mechanism 3 and the hose coupling 4. The hose locating mechanism 2 comprises a central mount 8, two Azimuth locking mechanisms 9 and 10 and a quick release hose mount 11.

The two Azimuth locking mechanisms 9 and 10 further comprise a handle assembly 12, a connection means 13 and a stab pin 14 or 15. The connection means 13 provides the activation mechanism for moving the Azimuth locking mechanisms 9 and 10 between their unlocked and locked positions. In Figure 2 both locking mechanisms 9 and 10 are in their locked positions. When unlocked the first Azimuth locking mechanism 9 allows rotation of the hose mount 11, and hence the hose coupling 4, about a horizontal axis while the second Azimuth locking mechanism 10, when unlocked, allows rotation about a vertical axis. It should be noted at this point that these two mechanisms lock independently of each other such that one may be in the locked position while the other is in the unlocked position. The stab pins 14 and 15 provide male members for the Azimuth locking mechanisms 9 and 10, respectively.

Figures 3 and 4 present further detail of the universal base clamping mechanism 3 in the absence of the hose locating mechanism 2. The base clamping mechanism 3 comprises a central frame 16, a rail clamp 17 and a female 18 for the Azimuth locking mechanism 10. The rail clamp 17 further comprises a swing over lock 19, a rail clamp tightening assembly 20, and two threaded locating rails 21.

The combination of the hose locating mechanism 2 and the base clamping mechanism 3 is achieved by inserting the stab pin 15 in the female locking component 18 with the handle assembly 12 in the unlocked position, as in Figure 5. This unlocked position corresponds to the case when the handle assembly 12 is in a plane parallel to the stab pin 15. The locked position is achieved by rotating the handle assembly 12 through 90 degrees such that the handle assembly 12 now lies in the plane perpendicular to the stab pin 15, as in Figure 1.

To employ the universal hose clamp 1, the base clamping mechanism 3 is attached to a railing, pole or other similarly reinforced structure. As shown in Figure 1, the desired structure to which the hose clamp 1 can be attached may take the form of a Y-shaped rail 22. Initially the swing over lock 19 is opened by unscrewing one of the threaded locating rails 21. This allows the rail clamp 17 to be placed in situ around the hand rail 22. With the hand rail 22 in place above the threaded locating rails 21, the swing over lock 19 is then closed and fastened. The base clamping mechanism 3 is then

secured in place by tightening of the rail clamp 17 by use of the rail clamp tightening assembly 20.

The second stage is to attach the hose locating mechanism 2 to the base clamping mechanism 3 via the vertical Azimuth locking mechanism 10 as described above. Thereafter the hose (not shown) is inserted within the cylindrical hose gripping aid 5 which is then tightened in the cylindrical mounting band 6 that is attached to the quick release hose mount 11. The tightening of the cylindrical hose gripping aid 5 in the cylindrical mounting band 6 is achieved via the screw thread mechanism 7. With the horizontal Azimuth locking mechanism 9 in the unlocked position the hose coupling 4 is mounted on the horizontal stab pin 14.

At this stage the hose is secured within the hose clamp 1 and can be deployed at full pressure by just one person. This has the obvious advantage of releasing manpower to carry out other important duties. By simply unlocking either of Azimuth locking mechanisms, 9 and 10, the hose can be rotated to provide universal cover over 4π steradians.

Mobility for the hose coupling 4 may be enhanced by its incorporation with a tripod system 23, as illustrated in Figure 6. This tripod 23 comprises a female member 24 for use in an Azimuth locking mechanism 10, adjustable legs 25 and a cross brace 26 to provide additional strength. It should be noted that the aforementioned female 24 is of a similar design to the female member 18 used in the previously described embodiment. Therefore, there is no requirement for the modification of the hose

locating mechanism 2. With this embodiment the tripod is assembled at the required location. The hose (not shown) is then mounted in the hose locating mechanism 2 as previously described. The vertical stab pin 15 is then inserted in the female of the tripod 18 and locked as required by the vertical Azimuth locking mechanism 10.

The use of alternative hose diameters is determined by the nature of the emergency. Thus the hose coupling 4 is not limited to use with one particular hose size. Selection of a hose can be accommodated within a particular cylindrical gripping aid 5 by the adjustment of the screw thread mechanism 7. If the hose diameter is significantly different then the quick release hose mount 11 allows a second hose clamp 4 of the desired dimensions to be quickly mounted on the hose locating mechanism 2.

An advantage of the present invention is that there is provided a universal hose clamp which can be used with known types of hose and whose parts are readily interchanged to meet the requirements of different emergency situations.

A further advantage of the present invention is that there is provided means which will reduce the manpower required to control a hose, and increase the numbers available to help those who are part of the emergency situation.

A further advantage of the invention is that the individual securing means are able to rotate such that the hose can be used in any direction thus allowing the changing needs of an emergency situation to be met.

In an alternative embodiment the clamp may be provided with means to enable control from a remote source. For example an electronic receiver and control electronics could be mounted within the central mount 8 of the universal hose locating mechanism 2. This would allow the direction of the hose coupling 4 to be altered without the requirement for direct human contact.

Further modifications and improvements may be added without departing from the scope of the invention herein intended.

Claims:

1. A universal hose clamp comprising a universal hose locating mechanism, a hose coupling for connecting a hose to the hose clamp, and a securing means for securing said locating mechanism to a support structure.

2. A universal hose clamp as claimed in Claim 1, wherein the support structure is an existing railing, pole or other similar structure.

3. A universal hose clamp as claimed in Claim 2, wherein the securing means is a universal base clamping mechanism adapted for clamping onto the support structure.

4. A universal hose clamp as claimed in Claim 1, wherein the support structure is a portable independent frame.

5. A universal hose clamp, as claimed in Claim 4, wherein the portable independent frame is a tripod.

6. A universal hose clamp, as claimed in Claims 4 and 5, wherein the securing means is a locking mechanism adapted to lockably engage the hose locating mechanism to the support structure, wherein the locking mechanism comprises a male and female member that are adapted to lockably engage.

7. A universal hose clamp as claimed in Claim 1, wherein the hose locating mechanism comprises a

central mount, two Azimuth locking mechanisms and a quick release hose mount.

8. A universal hose clamp as claimed in Claim 7, wherein the Azimuth locking mechanism contained on the locating mechanism comprises a handle assembly, a connection means and a stab pin.

9. A universal hose clamp as claimed in Claim 7, wherein the Azimuth locking mechanism contained on the locating mechanism moves between a locked position when the handle assembly is in a plane parallel to the stab pin, and a locked position when the handle assembly is rotated through 90 degrees to lie in a plane perpendicular to the stab pin.

10. A universal hose clamp as claimed in Claim 7, wherein the first Azimuth locking mechanism contained on the locating mechanism provides a means for rotating the hose coupling about an axis in the horizontal plane.

11. A universal hose clamp as claimed in Claim 7, wherein the second Azimuth locking mechanism contained on the locating mechanism provides a means for rotating the hose coupling about an axis in the vertical plane.

12. A universal hose clamp as claimed in Claim 1, wherein the hose coupling comprising a gripping aid, a mounting band and a securing means.

13. A universal hose clamp as claimed in Claim 12, wherein the gripping aid is cylindrical in shape.

14. A universal hose clamp as claimed in Claim 12, wherein the gripping aid is made of a flexible material, namely rubber.

15. A universal hose clamp as claimed in Claim 12, wherein the mounting band is cylindrical in shape.

16. A universal hose clamp as claimed in Claim 12, wherein the securing means is a screw thread mechanism.

17. A universal hose clamp as claimed in Claim 1, wherein the attachment means for the hose coupling to the universal hose clamp is easily detachable.

18. A universal hose clamp as claimed in Claim 17, wherein the attachment means an Azimuth locking mechanism.

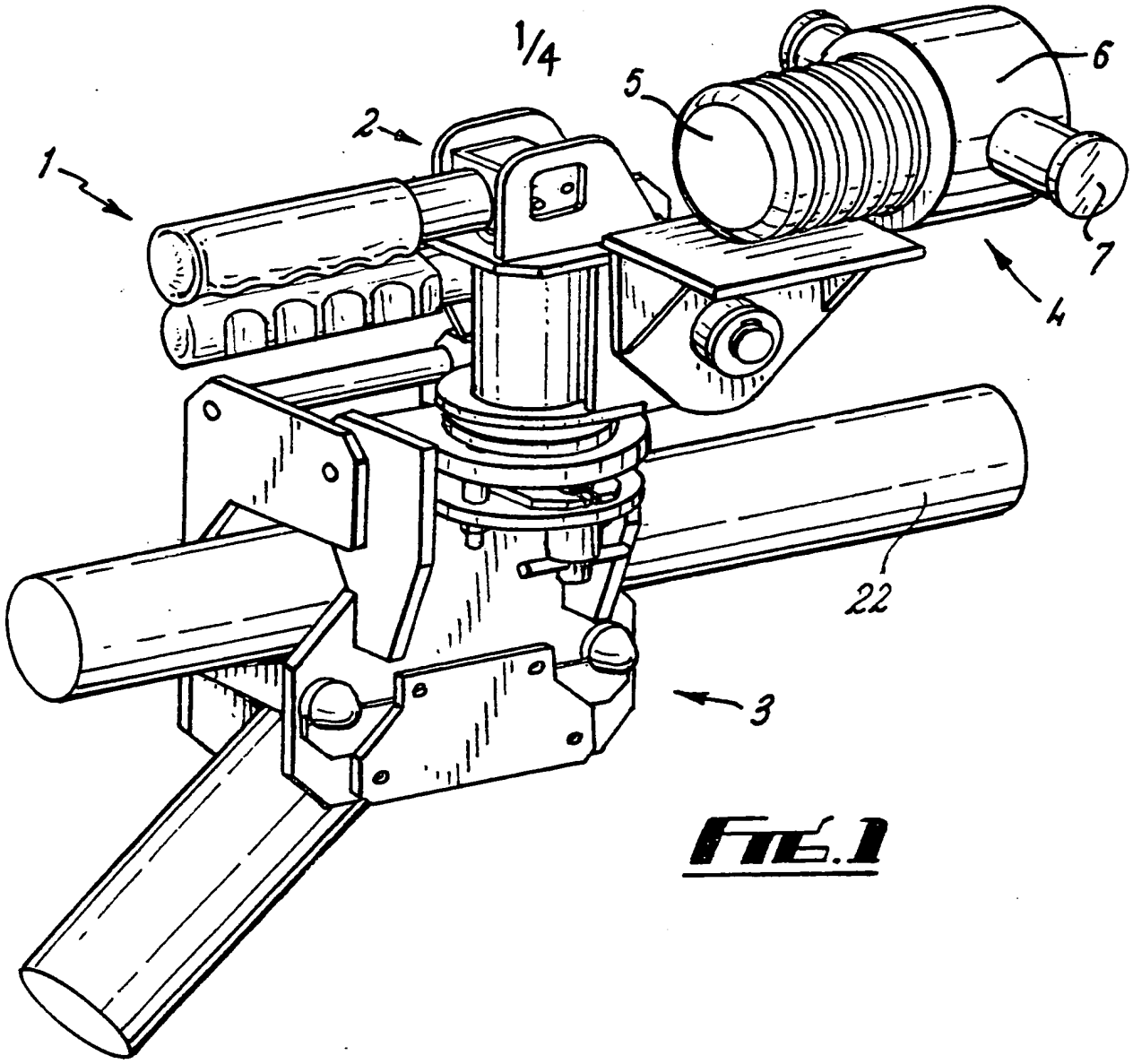


FIG.1

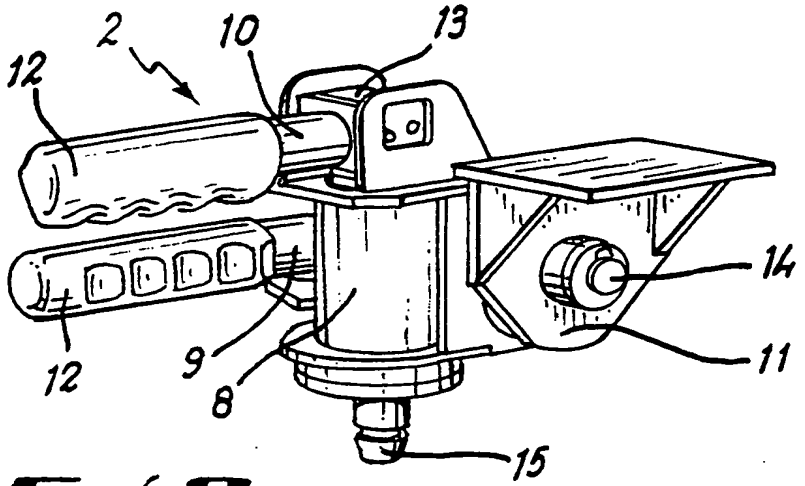


FIG.2

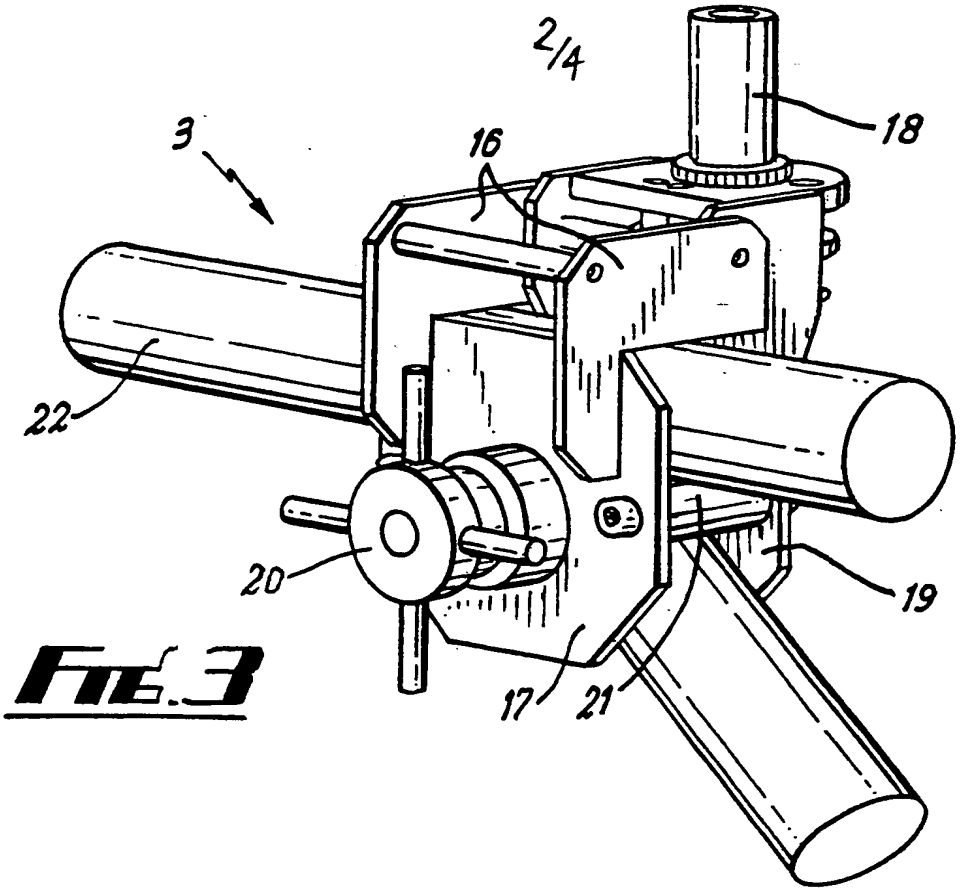


FIG.3

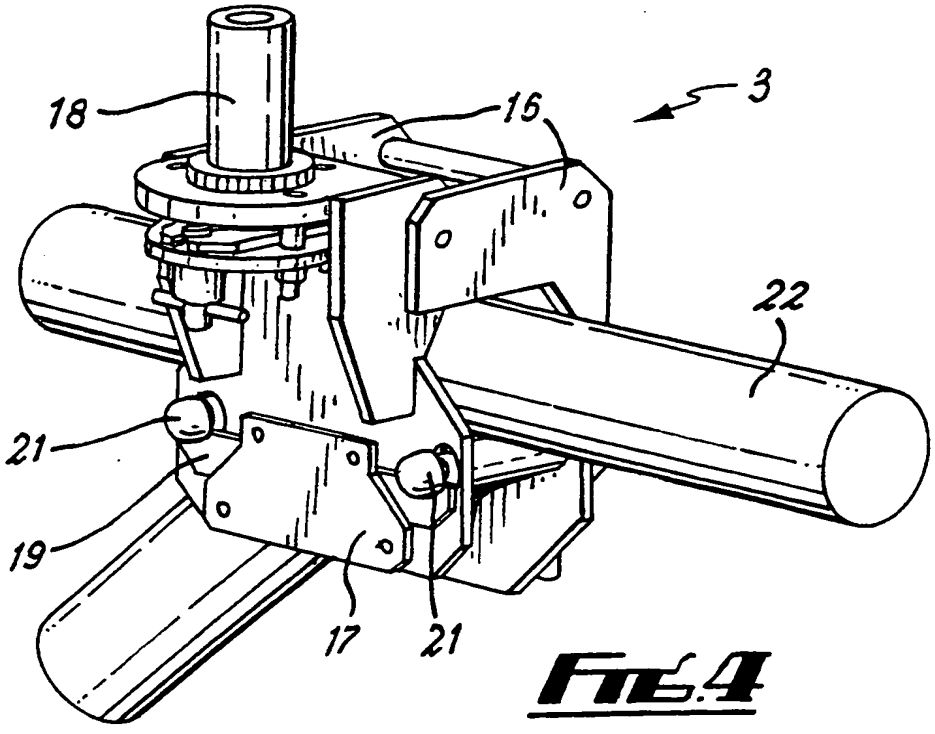


FIG.4

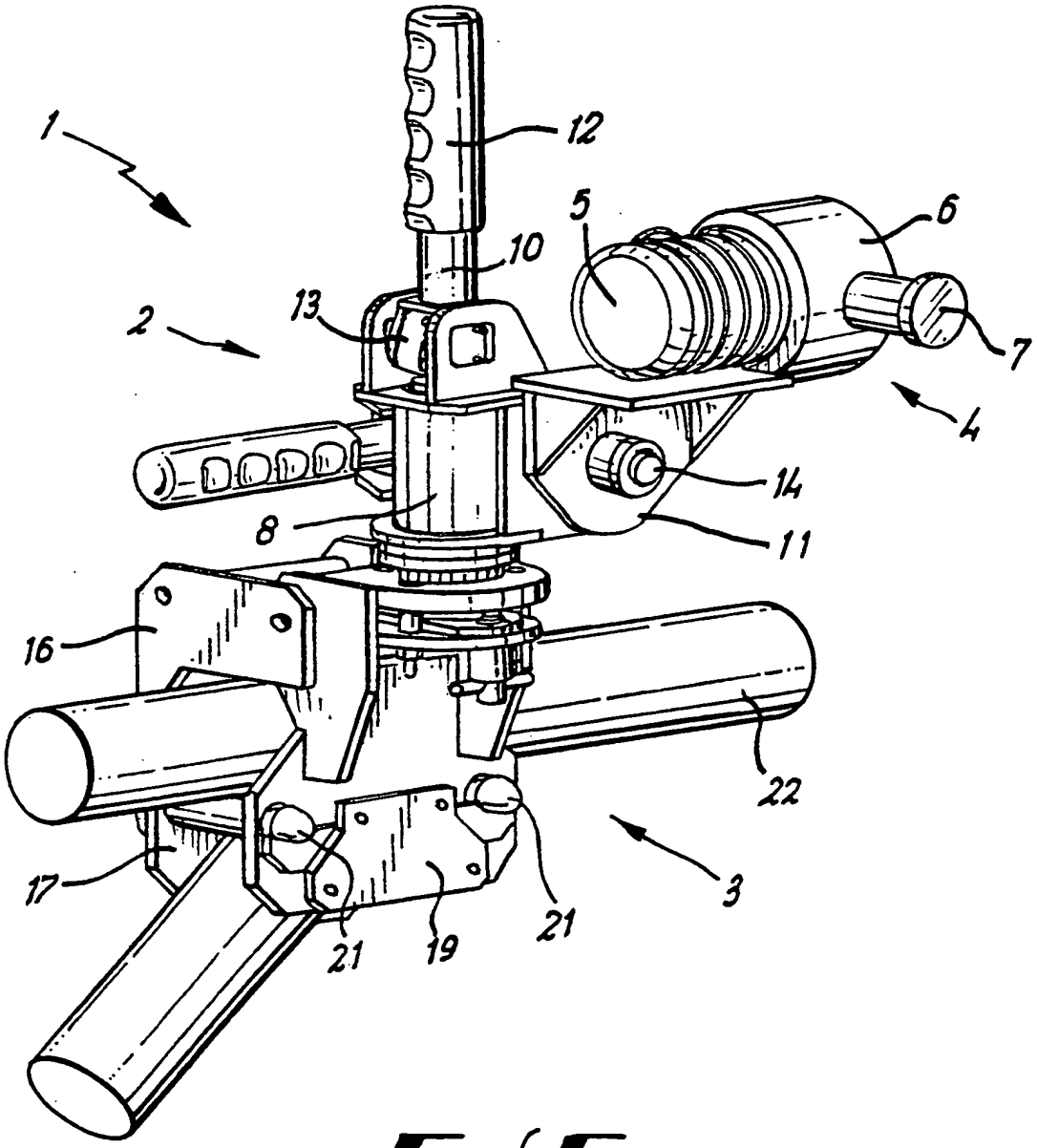


FIG.5

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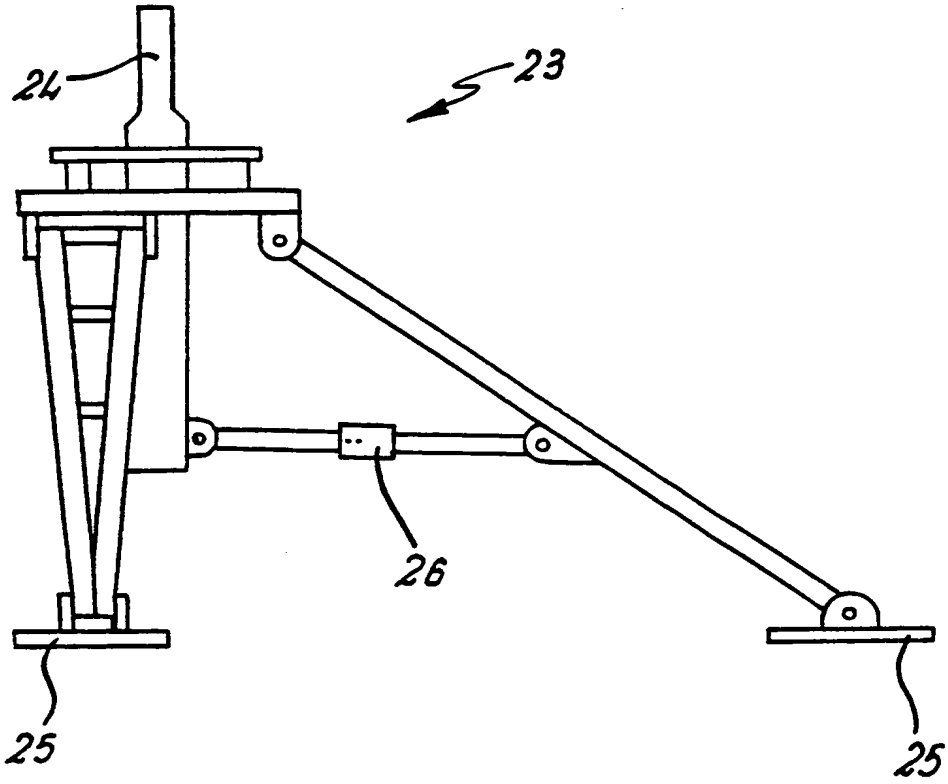

FIG.6